

Serial No. 09/996,850
Reply to Office Action of August 12, 2003
Page 2

Amendments to the Specification:

Please replace paragraph [0025] with the following rewritten paragraph:

[0025] Figure 3 is a sectional view illustrating another embodiment of the present invention which includes a diesel engine exhaust filter system 100 including a catalyzed foam filter 110 and wall flow filter 116 combination. The term "catalyzed foam filter" as used herein means a foam having a catalyst coated on, absorbed, adsorbed and/or embedded in the foam. The diesel engine exhaust system 100 includes an exhaust conduit 102 which naturally includes a cavity 104 through which exhaust from a diesel combustion engine flows from the combustion engine through the exhaust conduit 102 and is eventually expelled to the atmosphere. The system 100 includes the catalyzed foam filter 110 having open pores (as described above) and the wall flow filter 116 housed in the cavity 104 of the exhaust conduit 102. The wall flow filter 116 is preferably a single cell structure and includes a porous wall 118 that is spaced a distance from an inner surface 103 of the conduit 102. Preferably, the catalyzed foam filter 110 and the wall flow filter 116 are both supported by a separator 106 that extends between inner surfaces 103 of the conduit 102. Preferably, the separator 106 includes an opening 107 therethrough exposing a front face 108 of the catalyzed foam filter 110 so that exhaust gases may flow through the opening 107 in the separator 106 and into the foam 110. The exhaust gases flow in the direction of arrows 121 from the diesel combustion engine flow towards the front face 108 of the catalyzed foam filter 110, through the catalyzed foam filter 110, and through a porous wall 118 of the wall flow filter 116 as indicated by arrows 122. Particulates are trapped by the catalyzed foam filter 110, and by the wall flow filter 116 in a space 120 between the catalyzed foam filter 110 and the wall 118 of the wall flow filter 116. The porous wall 118 may be any suitable material such as a ceramic, including, for example, alumina with 10 to 20 micron pore size and a porosity of 40% or greater. The wall 118 may have a thickness of 0.25 mm to 1 mm, and preferably 0.5 mm. The catalyzed foam filter 110 includes a longitudinal side (or sides) edge or peripheral edge 112 and a rear face ~~104~~ 204. The side edge 112 and rear face ~~104~~ 204 are each spaced a distance of about 2 mm to 5 mm

Serial No. 09/996,850

Reply to Office Action of August 12, 2003

Page 3

from the porous wall 118 of the wall flow filter 116 to provide the space 120 therebetween for the accumulation of particulates in the diesel exhaust gas. Preferably, at least a portion of the wall flow filter 116 surrounds a portion of the catalyzed foam filter 110. In a preferred embodiment, the wall flow filter 116 surrounds the catalyzed foam filter 110 along at least a portion of the longitudinal side edge 112 and the rear face ~~104~~ 204 of the catalyzed foam 110. However, it is also contemplated that a solid cap (not shown) may be provided adjacent the rear face ~~104~~ 204 to force the flow of exhaust gas out of the side edge 112 and not out of the rear face ~~104~~ 204. A perspective view of a diesel exhaust filter system with a single catalyzed foam filter 110 and wall flow filter 116 combination is shown in Figure 5.